Thus with a match, for example, the patients could describe the shape and size, criticize the odor of the fumes, show disgust at the taste of the phosphorus, repeat the word *match,* spell it, tell that it was made of wood, withdraw from the heat and sight of the blaze and yet declare that it was an unfamiliar object, they had never seen anything like it, and moreover could neither describe its uses nor name it. There was no arousal of a concrete memory concept of the object itself despite the accurate association of its many qualities. The same was true of coins, bills and other objects.

Assuming the existence of such a center, it seemed not improbable that it lay in the left brain and in the great unknown territory lying at the junction of, and composed of, adjacent portions of the occipital, the parietal and temporal lobes where it would be especially accessible to all sensory fields and especially close to the visual and kineto-kinesthetic cortical areas. It was accordingly stated that, if autopsy should be permitted in the cases mentioned, an area of especially intense cortical atrophy would be looked for in the locality indicated. Such a lesion—a roughly circular moderately deep excavation from 2 to 2.5 cm. in diameter—is here to be seen in the brain of one of these patients and at that part of the cortex in which it was assumed that the centers for concrete concepts might be located. Of course it would be quite unscientific, rash and unwarranted to deduct great significance from the chance coincidence of a lesion situated at a point indicated in a lucky guess—for such reasoning as led to the above conclusion is not to be exalted beyond the realm of guessing.

It is meet, however, that the examination of the brain of the second case should be awaited with respectful patience though with eager interest for the details which, should they prove to agree with those here to be seen, would afford a basis for one of those tentative theories which occasionally lead the way to a more certain knowledge.

THE CYTOLOGY OF THE CEREBROSPINAL FLUID: RÉSUMÉ OF STUDIES AND DEMONSTRATIONS.

By Dr. Cotton and Dr. J. B. Ayer, Jr.

Alzheimer's method of treating the cerebro-spinal fluid, published in the *Centralblatt für Nervenheilkunde und Psychiatrie,* June 15, 1907, goes far to obviate the faults of the earlier methods. It depends for its good results upon fixation of cells in the fluid by alcohol, and the subsequent treatment of them so that they may be mounted and cut by a microtome. The method is briefly as follows: To one third volume of cerebrospinal fluid (3 c.c. were used) two thirds by volume of 96 per cent. alcohol was added in a centrifuge glass with conical bottom, and the whole thoroughly mixed. A thin white cloud of precipitated proteids will result; this is centrifugalized for one hour at high speed, when a small firm coagulated mass containing the cells will be found at the bottom. The supernatant fluid is decanted and absolute alcohol added for one hour, followed by alcohol and ether equal parts, and ether, each for one hour. Now by touching the side of the coagulum just enough to loosen it, a tap on the bottom of the glass will dislocate it, when it is immediately placed in thin celloidin. The coagulum is later mounted in thick celloidin on a block and kept indefinitely in 80 per cent. alcohol. Sections were cut uniformly at 14 m. and the routine stain employed was Pappenheim's pyronin-methyl green mixture, permanent slides being thus obtained.

By this method cells are found pretty evenly distributed throughout the coagulum, thus giving us a basis for a fair quantitative as well as qualitative count.

1. *Qualitative.*—The following cells may very readily be recognized in the fluids studied. Where there are many "unclassified" cells the fluids have always been from post mortem punctures (and the cells may therefore have undergone autolytic and other changes). Group I: Cells normally found in the cerebrospinal fluid are (1) *endothelial cells,* these are cells having an oval or horseshoe-shaped nucleus with slight amount of chromatin substance, and a moderate amount of pink staining protoplasm (with pyronin); these are considered as normal findings because found in almost every fluid examined, and because they simulate cells found in the normal pia; (2) *lymphocytes,* resemble in every detail the lymphocyte of the blood—lymphocytes were found in every fluid studied; (3) *connective tissue cells,* while not found in every case should, however, not be considered an abnormal finding because found in the normal pia mater.

Group II.—Cells found under pathological or abnormal conditions are (4) *Phagocytic endothelial cells.* These phagocytes are undoubtedly similar cells to those described under class (1). The inclusions are almost invariably lymphocytes, though rarely a blood globule or another endothelial cell is recognized as an inclusion. These cells are also recognized in the pia of cases the fluids of which show them; (5) *Plasma cells,* the nucleus eccentrically placed resembles that of the lymphocyte, but the protoplasm is greater in amount, is stained a deep red with pyronin, having a blotchy appearance. A light area in the protoplasm at one edge of the nucleus is characteristic. These cells have been found only in cases in which they occurred in the pia, and in all of these cases, and these have only been general paretics. Transitional (?) and giant forms of plasma cells are also described; (6) *Polymorphonuclear leucocytes* are perhaps abnormal findings, though a few may be accounted for by blood contamination; (7) *Fibroblasts,* or young connective tissue cells are probably recognizable. They would seem to indicate an active meningeal process. (8) *Körnschen,* or fatty granule cells, have been found only post mortem in cases of cerebral softening. They are cells apparently of the endothelial class with fatty granule inclusions, as demonstrated by Sharlach R.

Besides the above cells, ependymal and possibly neuroglia cells were recognized. By this method also other extraneous cells such as tumor cells, could easily be recognized.

2. *Qualitatively* this method offers a fair standard of accuracy for the individual worker, and perhaps the results of many workers could be correlated with as much accuracy as by use of the other methods.

The work was taken up to determine its diagnostic value in insanity, and especially in general paralysis, with entire success as regards the latter.

From the table of living cases, the speakers were led to assign a certain characteristic cell picture to the fluid of general paresis, namely a large total cell count, approximately 75 per cent. of which are lymphocytes, presence of plasma cells, and frequently of a few phagocytic endothelial cells. Other living cases show no characteristic cell picture, and probably represent nearly normal fluids. From the study of the post mortem fluids they were led to believe that the Körnschen cell and perhaps the phagocytic endothelial cell may be of diagnostic value in organic conditions. The value of this method then lies in the possibility of obtaining by it beautiful cell pictures by which the diagnosis of general paresis is greatly aided, and by which cells characteristic of cerebral softening or even of tumor might be recognized if seen.

A MEANS OF DETERMINING THE "ALEXIC" OR REACTIVATING CONTENT OF HUMAN BLOOD SERUM

By Dr. Gay and Dr. Ayer

Attempts have been made to determine this reactivating power of human blood in order to gain some idea of the resistance of the individual to bacterial infection, but hitherto no reliable method has been offered by which the sera of different individuals may be compared. It was found that red blood cells which had been saturated with inactivated specific immune serum from an animal of another species offered in a given dosage a relatively fixed unit for the determination of the reactivating power of the blood. By means of this method the alexic content was determined in a number of patients suffering from different types of insanity, but physically well. No constant differences in alexic activity were noted in relation to forms of insanity. The marked correspondence of alexic power in these patients will probably serve as a basis for a normal mean by comparison with which similar determinations in cases of acute infectious disease may offer results of prognostic value.

Dr. Southard mentioned briefly a case of general paresis developing in an alcoholic. The patient was always spastic in legs during observation and some weeks before death showed signs of fresh lesions in the motor zones. The microscopic examination of the spinal cord showed a long-standing bilateral pyramidal tract sclerosis (Weigert's myelin sheath method) as well as a fresh degeneration, also bilateral, in the same region (Marchi method). The recent Marchi degeneration differed qualitatively in the different segments, gradually altering from groups of fat and myelin containing perivascular cells below to wholly intrafibrous blackening in the upper cervical segments. Dr. Southard employed these findings as logical support for the idea that the nerve fibers were undergoing a chronic progressive atrophy rather than the effects of local destruction. The cortical findings were somewhat confirmatory of this idea, since the cells of origin (such as had survived the original lesion) showed "neuronophagia" rather than axonal reactions.

THE ATTITUDE OF THE MEDICAL PROFESSION TOWARD THE PSYCHOTHERAPEUTIC MOVEMENT

By E. W. Taylor, M.D.

The object of the paper was to discuss the following propositions: First, the past and present attitude of the medical profession toward mental therapeutics; secondly, the present state of therapeutics in relation to the psychotherapeutic movement; thirdly, the general attitude of special students of the subject; and, finally, the means by which a knowledge of the movement may best be disseminated.